

**Listing of the Claims:**

The following is a complete listing of all the claims in the application, with an indication of the status of each:

Claims 1-12 (Canceled).

- 1      Claim 13 (New). A computer implemented method for creating,  
2      formatting or editing a database model of a physical environment,  
3      comprising the steps of:  
4          a) using a computer for editing one or more objects defining a  
5          modeled environment in which an in-building or campus communications  
6          network is or will be deployed, said environment having one or more of  
7          floors, walls, partitions, buildings, building complexes or compounds,  
8          terrain, foliage, or other sites or obstructions;  
9          b) verifying, using a computer, the sufficiency of said one or more  
10        objects to ensure a useful definition of said modeled environment and  
11        notifying a user of results of said verification of sufficiency;  
12        c) generating a set of formatted data based at least in part on said  
13        verification of sufficiency for use in a communications engineering or  
14        network management application; and  
15        d) rendering a three dimensional view of said modeled  
16        environment.
- 1      Claim 14 (New). The method of claim 13, further comprising the step of  
2      editing an object in said set of formatted data.
- 1      Claim 15 (New). The method of claim 13, further comprising the step of  
2      moving an object in said set of formatted data.
- 1      Claim 16 (New). The method of claim 13, further comprising the step of  
2      modifying one or more objects in said set of formatted data.

1 Claim 17 (New). The method of claim 13 wherein said step of using a  
2 computer for editing includes the step of removing extraneous drawing  
3 objects from said one or more objects.

1 Claim 18 (New). The method of claim 13 wherein said step of using a  
2 computer for editing includes the step of accepting a scanned image or  
3 drawing.

1 Claim 19 (New). The method of claim 13 wherein said step of using said  
2 computer for editing includes the step of modifying one or more of  
3 electrical properties, physical properties, aesthetic properties, and spatial  
4 configurations of one or more objects of said one or more objects.

1 Claim 20 (New). The method of claim 13 wherein said notifying  
2 performed in said verifying and notifying step is performed in an automatic  
3 fashion without feedback being provided to the user.

1 Claim 21 (New). The method of claim 13 wherein said notifying  
2 performed in said verifying and notifying step is performed by prompting  
3 the user and, when required to provide said useful definition, requires the  
4 user to correct any insufficiencies in response to an insufficiency  
5 notification.

1 Claim 22 (New). The method of claim 13 wherein said communications  
2 engineering or network management application is selected from the group  
3 consisting of one or more of wireless propagation prediction, measurement  
4 tools, component placement or layout visualization tools, optimization  
5 tools, bill of materials generating tools, and network performance  
6 management or prediction tools.

1 Claim 23 (New). The method of claim 13 further comprising the step of  
2 adding or removing at least one object in said set of formatted data.

1        Claim 24 (New). The method of claim 13 further comprising the step of  
2        specifying or invoking a propagation model for performing predictions of  
3        performance.

1        Claim 25 (New). The method of claim 13 further comprising the step of  
2        specifying or invoking a listing of communications equipment.

1        Claim 26 (New). The method of claim 13 further comprising the steps of:  
2                accepting at least one raster image file representing said physical  
3        environment; and  
4                scaling said at least one raster image file for incorporation into  
5        either said using a computer for editing step or said set of formatted data  
6        generated in said generating step.

1        Claim 27 (New). The method of claim 13 wherein said step of verifying  
2        performs one or more of the following:  
3                (i) removing unused and un-referenced objects from said one or  
4        more objects;  
5                (ii) removing unnecessary data selected from the group consisting  
6        of legends, initials, maps, map layers, text, and extraneous drawing  
7        objects;  
8                (iii) objects have been assigned attenuation factors;  
9                (iv) objects have been assigned colors;  
10                (v) objects have been assigned physical or electrical information;  
11                (vi) intersection of objects with floors, ceilings and other objects  
12        have been located;  
13                (vii) buildings are aligned with terrain;  
14                (viii) floors of a building are aligned with one another;  
15                (ix) determining if database has been verified previously;  
16                (x) determining if database is newly created, altered, modified,  
17        amended, edited, previously formatted or not previously formatted;

- 18 (xi) specifying at least one reference point;
- 19 (xii) scaling one or more objects of said one or more objects
- 20 (xiii) scaling a raster image;
- 21 (xiv) adding measurements at site specific locations;
- 22 (xv) creating a legend for the drawing;
- 23 (xvi) creating a boundary around drawing;
- 24 (xvii) specifying or invoking communications equipment listings;
- 25 (xviii) specifying or invoking a propagation model for performing
- 26 predictions of performance; and
- 27 (xix) specifying an air interface standard or operating frequency.

1 Claim 28 (New). The method of claim 13 wherein said generating step  
2 generates an editable database wherein one or more electrical properties,  
3 physical properties, aesthetic properties, and spatial configurations of one  
4 or more objects within said database can be altered.

1 Claim 29 (New). The method of claim 13 wherein said generating step  
2 generates set of formatted data in a form transportable to and usable by  
3 said communications engineering or network management application.

1 Claim 30 (New). An apparatus for creating, formatting or editing a  
2 database model of a physical environment, comprising:  
3 computer implemented means for editing one or more objects  
4 defining a modeled environment in which an in-building or campus  
5 communications network is or will be deployed having at least one of  
6 floors, walls, partitions, buildings, building complexes or compounds,  
7 terrain, foliage, or other sites or obstructions;  
8 means for verifying, by computer, the sufficiency of said one or  
9 more objects to ensure a useful definition of said modeled environment  
10 and notifying a user of results of said verification of sufficiency;  
11 means for generating a set of formatted data based at least in part  
12 on said verification of sufficiency for use in a communications engineering

13 or network management application; and  
14 means for rendering a three dimensional view of said modeled  
15 environment.

1 Claim 31 (New). The apparatus of claim 30 further comprising a means  
2 for adding or removing at least one object in said set of formatted data.

1 Claim 32 (New). The apparatus of claim 30 further comprising a means  
2 for moving an object in said set of formatted data.

1 Claim 33 (New). The apparatus of claim 30 further comprising a means  
2 for modifying one or more objects in said set of formatted data.

1 Claim 34 (New). The apparatus of claim 30 further comprising a means  
2 for editing one or more objects in said set of formatted data.

1 Claim 35 (New). The apparatus of claim 30 wherein said computer  
2 implemented means for editing removes extraneous drawing objects from  
3 said one or more objects.

1 Claim 36 (New) The apparatus of claim 30 wherein said computer  
2 implemented means for editing includes means for accepting a scanned  
3 image or drawing.

1 Claim 37 (New). The apparatus of claim 30 wherein said means for  
2 editing includes a means for modifying one or more of electrical  
3 properties, physical properties, aesthetic properties, and spatial  
4 configurations of one or more objects of said one or more objects.

1 Claim 38 (New). The apparatus of claim 30 wherein notifying performed  
2 by said means for verifying and notifying is performed in an automatic  
3 fashion without feedback being provided to the user.

1        Claim 39 (New). The apparatus of claim 30 wherein notifying performed  
2        by said means for verifying and notifying is performed by prompting the  
3        user and, when required to provide said useful definition, requires the user  
4        to correct any insufficiencies in response to an insufficiency notification.

1        Claim 40 (New). The apparatus of claim 30 wherein said communications  
2        engineering or network management application is selected from the group  
3        consisting of one or more of wireless propagation prediction, measurement  
4        tools, component placement or layout visualization tools, optimization  
5        tools, bill of materials generating tools, and network performance  
6        management or prediction tools.

1        Claim 41 (New). The apparatus of claim 30 further comprising a means  
2        for adding measurements to said set of formatted data.

1        Claim 42 (New). The apparatus of claim 30 further comprising a means  
2        for scaling at least one part of said set of formatted data.

1        Claim 43 (New). The method of claim 13 further comprising the step of  
2        scaling at least one part of said formatted data.

1        Claim 44 (New). The apparatus of claim 30 further comprising means for  
2        specifying or invoking a propagation model for performing predictions of  
3        performance.

1        Claim 45 (New). The apparatus of claim 30 further comprising a means  
2        for specifying or invoking a listing of communications equipment.

1        Claim 46 (New). The apparatus of claim 30 further comprising:  
2                means for accepting at least one raster image file representing said  
3        physical environment; and

4 means for scaling said at least one raster image file for  
 5 incorporation into either said computer implemented means for editing or  
 6 said set of formatted data generated by said means for generating.

1 Claim 47 (New). The apparatus of claim 30 wherein said means for  
 2 verifying performs one or more of the following:

- 3 (i) removing unused and un-referenced objects from said one or  
 4 more objects;
- 5 (ii) removing unnecessary data selected from the group consisting  
 6 of legends, initials, maps, map layers, text, and extraneous drawing  
 7 objects;
- 8 (iii) objects have been assigned attenuation factors;
- 9 (iv) objects have been assigned colors;
- 10 (v) objects have been assigned physical or electrical information;
- 11 (vi) intersection of objects with floors, ceilings and other objects  
 12 have been located;
- 13 (vii) buildings are aligned with terrain;
- 14 (viii) floors of a building are aligned with one another;
- 15 (ix) determining if database has been verified previously;
- 16 (x) determining if database is newly created, altered, modified,  
 17 amended, edited, previously formatted or not previously formatted;
- 18 (xi) specifying at least one reference point;
- 19 (xii) scaling one or more objects of said one or more objects
- 20 (xiii) scaling a raster image;
- 21 (xiv) adding measurements at site specific locations;
- 22 (xv) creating a legend for the drawing;
- 23 (xvi) creating a boundary around drawing;
- 24 (xvii) specifying or invoking communications equipment listings;
- 25 (xviii) specifying or invoking a propagation model for performing  
 26 predictions of performance; and
- 27 (xix) specifying an air interface standard or operating frequency.

1 Claim 48 (New). The apparatus of claim 30 wherein said means for  
2 generating generates an editable database wherein one or more electrical  
3 properties, physical properties, aesthetic properties, and spatial  
4 configurations of one or more objects within said database can be altered.

1 Claim 49 (New). The apparatus of claim 30 wherein said means for  
2 generating generates set of formatted data in a form transportable to and  
3 usable by said communications engineering or network management  
4 application.

1 Claim 50 (New). The method of claim 18 further comprising the steps of  
2 tracing said scanned image or drawing, and adding one or more traced  
3 objects from said tracing step to said one or more objects defining said  
4 modeled environment.

1 Claim 51 (New). The method of claim 13 further comprising the steps of  
2 reading in one or more files into said computer and determining the type of  
3 file read in said reading step by the contents of said one or more files.

1 Claim 52 (New). The method of claim 13 wherein at least a portion of  
2 said generating step occurs prior to said verifying step.

1 Claim 53 (New). The method of claim 13 wherein said generating step  
2 occurs after said verifying step.

1 Claim 54 (New). The method of claim 13 further comprising the step of  
2 adding measurements to said set of formatted data generated in said  
3 generating step.

1 Claim 55 (New). The method of claim 13 further comprising the step of  
2 adding measured or predicted values to said one or more objects which are



3 edited in said using a computer for editing step or represented in said  
4 formatted data.

1 Claim 56 (New). The method of claim 13 further comprising the step of  
2 scaling all or a portion of said set of formatted data generated in said  
3 generating step.

1 Claim 57 (New). The method of claim 13 further comprising the step of  
2 scaling all or a portion of said one or more objects that are edited in said  
3 using a computer for editing step.

1 Claim 58 (New). The apparatus of claim 36 wherein said computer  
2 implemented means for editing removes extraneous information or scales  
3 said scanned image or drawing.

1 Claim 59 (New). The apparatus of claim 30 further comprising means for  
2 reading in one or more files into said computer and means for determining  
3 the type of file read by the contents of said one or more files.

1 Claim 60 (New). The apparatus of claim 36 further comprising means for  
2 tracing said scanned image or drawing, and means for adding one or more  
3 traced objects to said one or more objects defining said  
4 modeled environment.

1 Claim 61 (New). The apparatus of claim 30 wherein said means for  
2 generating generates at least a portion of said formatted data prior to said  
3 means for verifying verifies the sufficiency of said one or more objects.

1 Claim 62 (New). The apparatus of claim 30 wherein said means for  
2 generating generates said formatted data after said means for verifying  
3 verifies the sufficiency of said one or more objects.

1       Claim 63 (New). The method of claim 18 wherein said step of using a  
2       computer for editing removes extraneous information or scales said  
3       scanned image or drawing.

1       Claim 64 (New). The apparatus of claim 30 further comprising means for  
2       of adding measured or predicted values to said one or more objects which  
3       are edited by said computer implemented means for editing or are  
4       represented in said formatted data.

1       Claim 65 (New). The apparatus of claim 30 further comprising means for  
2       scaling all or a portion of said set of formatted data generated by said  
3       means for generating.

1       Claim 66 (New). The apparatus of claim 30 further comprising means for  
2       scaling all or a portion of said one or more objects that are edited by said  
3       computer implemented means for editing.